IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-13 have been amended as follows:

Listing of Claims:

Claim 1 (currently amended): A method of measuring a three-dimensional surface shape of a workpiece (W) by moving a three-dimensional measuring unit [[(12)]] mounted on a robot [[(14)]] to trace a surface of said workpiece (W), comprising:

the first step of setting and recording block data ~~(120)~~ representing a measuring operation to cause said three-dimensional measuring unit [[(12)]] to trace a predetermined area;

the second step of setting a length (U) and/or a height (h) of said workpiece (W);

the third step of selecting one of a plurality of basic shape types which is similar to a shape of said workpiece (W);

the fourth step of duplicating said block data ~~(120)~~ such that a hypothetical block representing said block data ~~(120)~~ covers an area to be measured of the surface of said workpiece (W) which is projected onto a hypothetical space, depending on the selected basic shape type and the length (U) and/or the height (h) of said workpiece (W); and

the fifth step of measuring the surface shape of said workpiece (W) based on the duplicated block data ~~(120)~~.

Claim 2 (currently amended): A method according to claim 1, wherein said three-dimensional measuring unit [[(12)]] includes a displacement gage [[(20)]] for measuring a distance up to said workpiece (W), and said robot [[(14)]] is operated based on the distance measured by said displacement gage [[(20)]] to move said three-dimensional measuring unit [[(12)]] toward or away from said workpiece (W) to keep said three-dimensional measuring unit [[(12)]] in a measurable range from said workpiece (W) while the measuring operation is performed.

Claim 3 (currently amended): A method according to claim 1, wherein said block data ~~(120)~~ comprises data representing a motion pattern for reciprocally moving said three-dimensional measuring unit [[(12)]] while displacing said three-dimensional measuring unit [[(12)]] horizontally by a detection width (D).

Claim 4 (currently amended): A method according to claim 1, wherein in said fourth step, said block data ~~(120)~~ is deformed and duplicated.

Claim 5 (currently amended): A method according to claim 1, wherein in said fifth step, after said surface shape is measured based on predetermined block data ~~(120)~~ and when said surface shape is measured based on next block data ~~(120)~~, a base [[(30)]] of said robot [[(14)]] is moved in positional alignment with the next block data ~~(120)~~.

Claim 6 (currently amended): A method according to claim 5, wherein said base [[(30)]] is placed on a movable carriage [[(22)]], and said base [[(30)]] is moved when said movable carriage [[(22)]] is moved.

Claim 7 (currently amended): A method of measuring a three-dimensional surface shape of a workpiece (W) by moving a three-dimensional measuring unit [[(12)]] mounted on a robot [[(14)]] to trace a surface of the workpiece (W), comprising:

the step of setting a basic path for moving said three-dimensional measuring unit [[(12)]] a predetermined distance; and

the step of duplicating said basic path a plurality of times at predetermined intervals to set block data ~~(120)~~ representing a measuring operation to cause said three-dimensional measuring unit [[(12)]] to trace the surface shape of said workpiece (W).

Claim 8 (currently amended): An apparatus for measuring a three-dimensional surface shape of a workpiece (W) by moving a three-dimensional measuring unit [[(12)]] mounted on a robot [[(14)]] to trace a surface of said workpiece (W), comprising:

a block data setting recorder ~~(100)~~ for setting and recording block data ~~(120)~~ representing a measuring operation to cause said three-dimensional measuring unit [[(12)]] to trace a predetermined area;

a data input unit [[(66)]] for setting a length (U) and/or a height (h) of said workpiece (W);

a basic shape selector ~~(102)~~ for selecting one of a plurality of basic shape types which is similar to a shape of said workpiece (W);

a block data duplicator ~~(104)~~ for duplicating said block data ~~(120)~~ such that a hypothetical block representing said block data ~~(120)~~ covers an area to be measured of the surface of said workpiece (W) which is projected onto a hypothetical space, depending on the selected basic shape type and the length (U) and/or the height (h) of said workpiece (W); and

a measurement performing unit ~~(106)~~ for measuring the surface shape of said workpiece (W) based on the duplicated block data ~~(120)~~.

Claim 9 (currently amended): An apparatus according to claim 8, wherein said three-dimensional measuring unit [[(12)]] includes a displacement gage [[(20)]] for measuring a distance up to said workpiece (W), and said robot [[(14)]] is operated based on the distance measured by said displacement gage [[(20)]] to move said three-dimensional measuring unit [[(12)]] toward or away from said workpiece (W) to keep said three-dimensional measuring unit [[(12)]] in a measurable range from said workpiece (W) while the measuring operation is performed.

Claim 10 (currently amended): An apparatus according to claim 8, wherein said block data ~~(120)~~ comprises data representing a motion pattern for reciprocally moving said three-dimensional measuring unit [[(12)]] while displacing said three-dimensional measuring unit [[(12)]] horizontally by a detection width (D).

Claim 11 (currently amended): An apparatus according to claim 8, wherein said block data duplicator duplicates said block data ~~(120)~~ while deforming said block data ~~(120)~~.

Claim 12 (currently amended): An apparatus according to claim 8, wherein after said measurement performing unit measures said surface shape based on predetermined block data ~~(120)~~ and when said measurement performing unit measures said surface shape based on next block data ~~(120)~~, a base [[(30)]] of said robot [[(14)]] is moved in positional alignment with the next block data ~~(120)~~.

Claim 13 (currently amended): An apparatus according to claim 12, wherein said base [[(30)]] is placed on a movable carriage [[(22)]], and said base [[(30)]] is moved when said movable carriage [[(22)]] is moved.